

REMARKS

In the Final Office Action mailed on May 5, 2005, claims 1, 9-11, 17 and 20 have been objected to based on a language informality. Claims 1, 10, 11, 17 and 20 have been amended herein as suggested to address this informality, and claim 9 has been cancelled.

The Final Office Action objected to claims 2-4, 13-14 and 18-19 as depending from a rejected base claim, but otherwise indicated these claims to be allowable. Claim 1 has been amended to include the limitations of claim 2 (claim 2 has been canceled), claim 11 has been amended to include the limitations of claim 13 (claim 13 has been canceled), and claim 17 has been amended to include the limitations of claim 18 (claim 18 has been canceled). As a result, claims 1, 11, and 17 represent claims 2, 13 and 18 in independent form, respectively, and are therefore allowable. Remaining claims subject to this objection have been amended to depend from appropriate of amended claims 1, 11 or 17, and are therefore allowable.

The Final Office Action has also maintained the previous rejection of claims 1, 5-9, 11-12, 15-17 and 20 as anticipated under 35 U.S.C. 102(b) over U.S. Patent No. 5,740,347 to Avidin ("the '347 patent"). Claim 1 has been amended to include the limitations of objected to claim 2, and is therefore allowable. Claims 5-6 depend from claim 1 and are therefore allowable. Claim 11 has been amended to include the limitations of objected to claim 13, with the result that it is allowable. Claims 12 and 15 depend from claim 11 and are therefore allowable. Claim 9 has been cancelled.

The anticipation rejection of claims 7, 8, 16 and 20 is traversed. For convenience of consideration, claims 7 and 16 have been amended to be in independent form

and include the limitations of the original independent claim from which they depended (original claims 1 and 11, respectively). Each of claims 7, 8, 16 and 20 require steps of identifying latches that are connected to more than one incoming global path, creating a clone latch for each of the global paths greater than one for each of the identified latches, and moving one of the incoming global paths from each of the identified latches to one of the clone latches whereby each of the identified latches and each of the clone latches are connected to only one incoming global path.

As discussed in the specification, these required steps allow embodiments of the invention to consider other paths in addition to the worst case global path:

These embodiment steps generally comprise identifying latches in each of the blocks that are connected to more than one incoming global path, creating a “clone” latch for each of the global paths greater than one, and connecting one each of the global paths greater than one to one each of the clone latches. That is, every latch having more than one incoming global path will have all of the global paths except for one removed. One each of the removed global paths will be connected to one each newly created clone latches. As a result, each global path will terminate at a latch having only one incoming global path. When pruning is carried out, no paths will thus be removed and consideration of each and every global path will be made.

Specification, p. 14, line 20 – 29. The specification further explains that many commercial analysis tools “prune” circuit models by removing all incoming paths except for the one that results in the worst case timing scenario, and that this can be disadvantageous since there can be value in considering more than only the worst case. *Id.*, p. 14, lines 7-13. The required “cloning” steps of claims 7, 8, 16 and 20 address this disadvantageous result, and allow for more than a worst case model to be considered. *Id.*, p. 14, lines 26-29. This represents an important benefit achieved by some embodiments of the invention.

The '347 patent fails to disclose or suggest these required steps of claims 7, 8, 16 and 20. Although the Final Office Action cites FIGS. 30 – 35 and col. 22, line 27 – col. 24, line 18 of the '347 patent as disclosing these steps, a review of this cited portion reveals no such disclosure. It is submitted, in fact, that the cited portion of the '347 patent appears to teach away from the required steps of claims 7, 8, 16 and 20 since the '347 patent teaches consideration of only a worst case path:

The present invention first checks whether there is a worst path already in the database. step 550. If so, then the present invention checks whether the current path is worse than the path stored in the data base, step 560. If not, no information need be saved. If the current path is worse, then the present invention gets the coefficients from the data structure, associates them with the current path and stores the current path as the worst path, displacing the previously stored worst path. Steps 590 and 600.

The '347 patent, col. 24, lines 8 – 16.


As a result, claims 7, 8, 16 and 20 are allowable over the '347 patent, and the anticipation rejection of these claims should be withdrawn. Likewise, all remaining claims are believed to be allowable in their present form. Amendments made herein have not introduced any new matter, but instead have simply put claims into independent form. No new search is required. The amendments have placed all of the claims in a condition suitable for allowance, or in the alternative have better framed issues for consideration under appeal.

For these reasons, the amendments should be entered. Should the Examiner feel that there are issues remaining which need to be addressed before the claims can be allowed, he is invited to contact the undersigned attorney by phone to discuss the same.

Respectfully submitted,

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